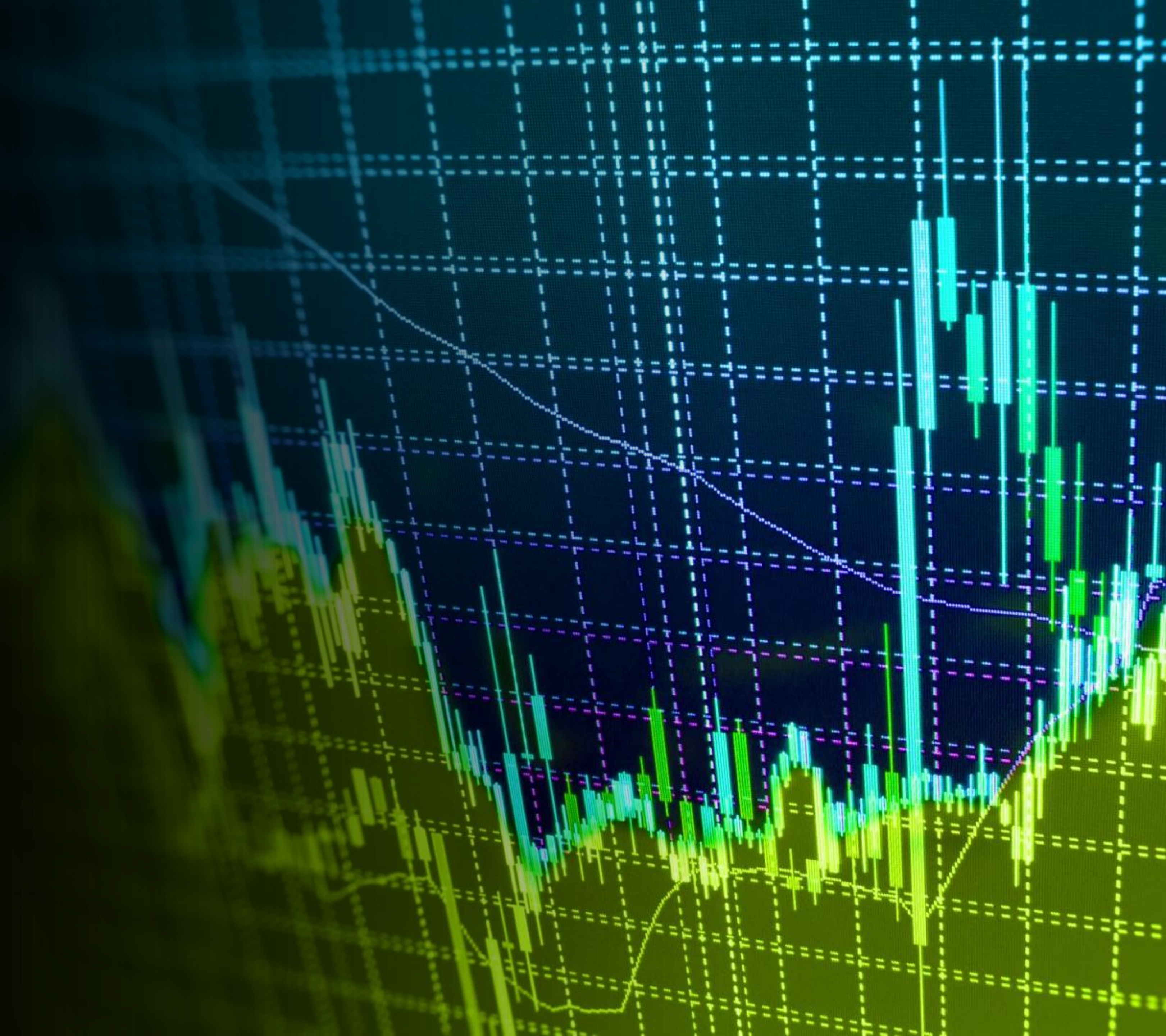
Wharton Business and Financial Modeling Capstone



Portfolio Performance

The Importance Of Portfolio Diversification

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Concept of Diversification

- The process of allocating capital in different areas instead of investing in a single asset.

- The idea is to invest in a mix of assets that would each react differently to the same event.

This combination minimizes the overall risk of an investment by reducing the exposure to any one particular asset.

Diversified Portfolio compared to a Single Stock (AAPL)

The diversified portfolio consists of two assets, fixed income and equity. The “Vanguard Total Bond Market Index Fund” (VBTLX) and the Vanguard 500 Index (VFIAX).

Portfolio Comparison

	Diversified Portfolio	Single Stock
expected return	0.95%	0.43%
variance	0.0001	0.0081
std	1.03%	8.97%
sharpe ratio	0.921	0.048

Monthly Returns	Diversified Portfolio	Single Stock
Jan-16	-0.62%	-7.52%
Feb-16	0.41%	-0.13%
Mar-16	2.82%	12.72%
Apr-16	0.39%	-13.99%
May-16	0.59%	7.18%
Jun-16	1.40%	-4.27%
Jul-16	1.62%	9.01%

- The single stock portfolio has the possibility of great gains but also huge losses
- The very high volatility each month leads to reduced expected returns
- The diversified portfolio on the other hand shows very little deviation
- As a result it provides a more stable situation with controlled exposure

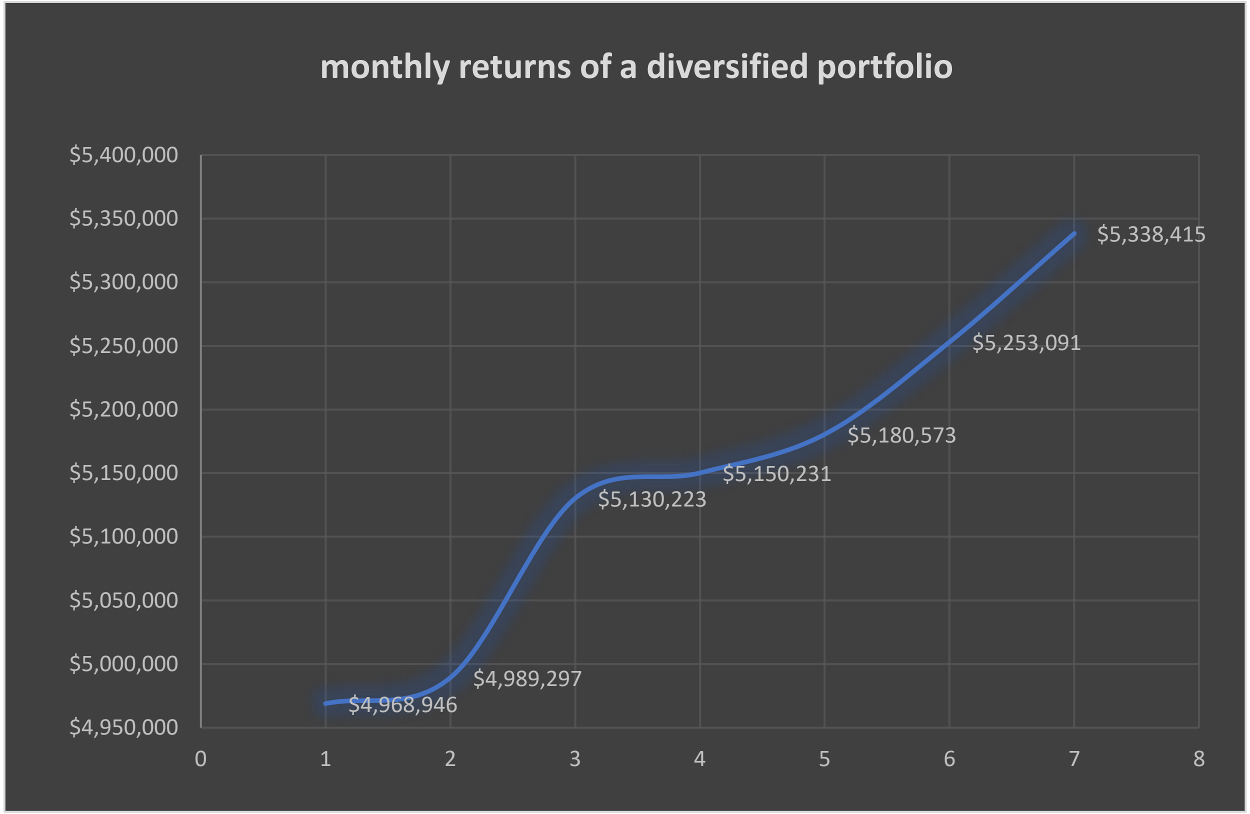
Portfolio Comparison

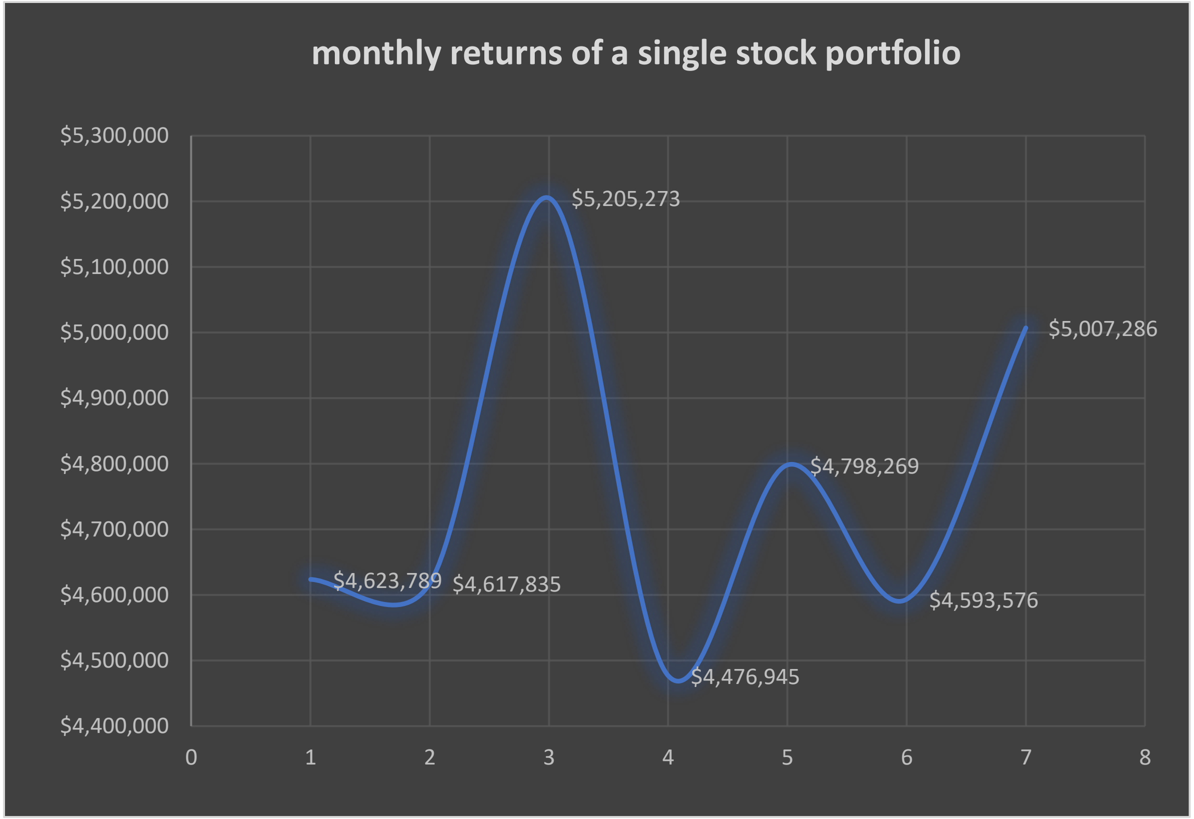
Monthly Returns in $	Diversified Portfolio	Single Stock
January	$4,968,946	$4,623,789
February	$4,989,297	$4,617,835
March	$5,130,223	$5,205,273
April	$5,150,231	$4,476,945
May	$5,180,573	$4,798,269
June	$5,253,091	$4,593,576
July	$5,338,415	$5,007,286

- Initial Investment -> $5,000,000
- The diversified portfolio quickly recovered from the initiatory drop in returns and has a steady increase.
- On the contrary, the single stock is showing inconsistency, moving up and down the initial investment.

Portfolio Comparison

Here we can see the movements of the two investments





Portfolio Comparison

- The investment on the single asset, as shown above, is highly unpredictable.
- It can go very high, but can also lead to a huge loss on a bad day.
- Our mixed asset portfolio on the other hand provides stability and a continuous growth of the value of our portfolio.

Conclusion

- The mixed asset portfolio is clearly the best option as it provides higher expected returns combined with lower variance.
- Although diversification cannot guarantee against loss, it is the best way to control the returns even when facing a down market.
- By diversifying our portfolio, we can balance the loss from one asset with the gains of another.
- Thus, it is the most important component of reaching long-range financial goals while minimizing risk.

Thank you for your time